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Abstract

Excavations in the late 19th century and surveys carried out in the 1970s have produced 12 boxwood combs from the Roman fort at Vechten (NL) (fig. 1). They are to be considered waste material that was dumped in the river Rhine which in the Roman period ran just north of the camp. In this article, this set of artefacts is first discussed. It is argued that such boxwood combs were a regular phenomenon in military and urban settlements of the Roman period.
Though in Roman archaeology combs have been mainly associated with women and female beauty, the finds from the fort at Vechten suggest that in this particular case they were mainly used by the male population of the local garrison for combing their hair, cleaning the scalp and hair from dust, dandruff, and parasites, and perhaps for trimming their beards. Through an analogy with early modern and contemporary state armies, it is finally argued that the combs played a key role in the creation and maintenance of an imposed military culture aimed at the strengthening of group cohesion and an esprit de corps. In contrast with the heroic warrior, the bodily appearance of the Roman soldier may thus have been prescribed by rules that were set by army commanders rather than generated by personal choice.

Keywords: boxwood combs, Roman army, gender, corporeal body, hygiene, *esprit de corps*

1 Introduction

The Roman fort of Vechten lies to the west of the modern town of Utrecht (fig. 2). In the Roman period, the fort was situated directly on the river Rhine. The old river channel, which has been recorded just to the north of the fort, silted up in the 3rd century AD. This river channel was cut in 1977 during construction works for the broadening of a motorway, when many extraordinary finds from the Roman period were brought to light. As a result of the lack of regular excavations, only a small part of the finds was saved from final destruction due to the efforts of amateur archaeologists. In the years to follow, some of the most spectacular finds were reported in *Westerheem*, the main journal of amateur archaeologists in the Netherlands (Kalee 1980, 1981, 1989; Van Driel-Murray 1980), but the majority of the small finds has remained unpublished. This contribution takes as its starting point the wooden combs from Vechten and attempts to tease out their significance for the reconstruction of garrison life in this Roman fort.

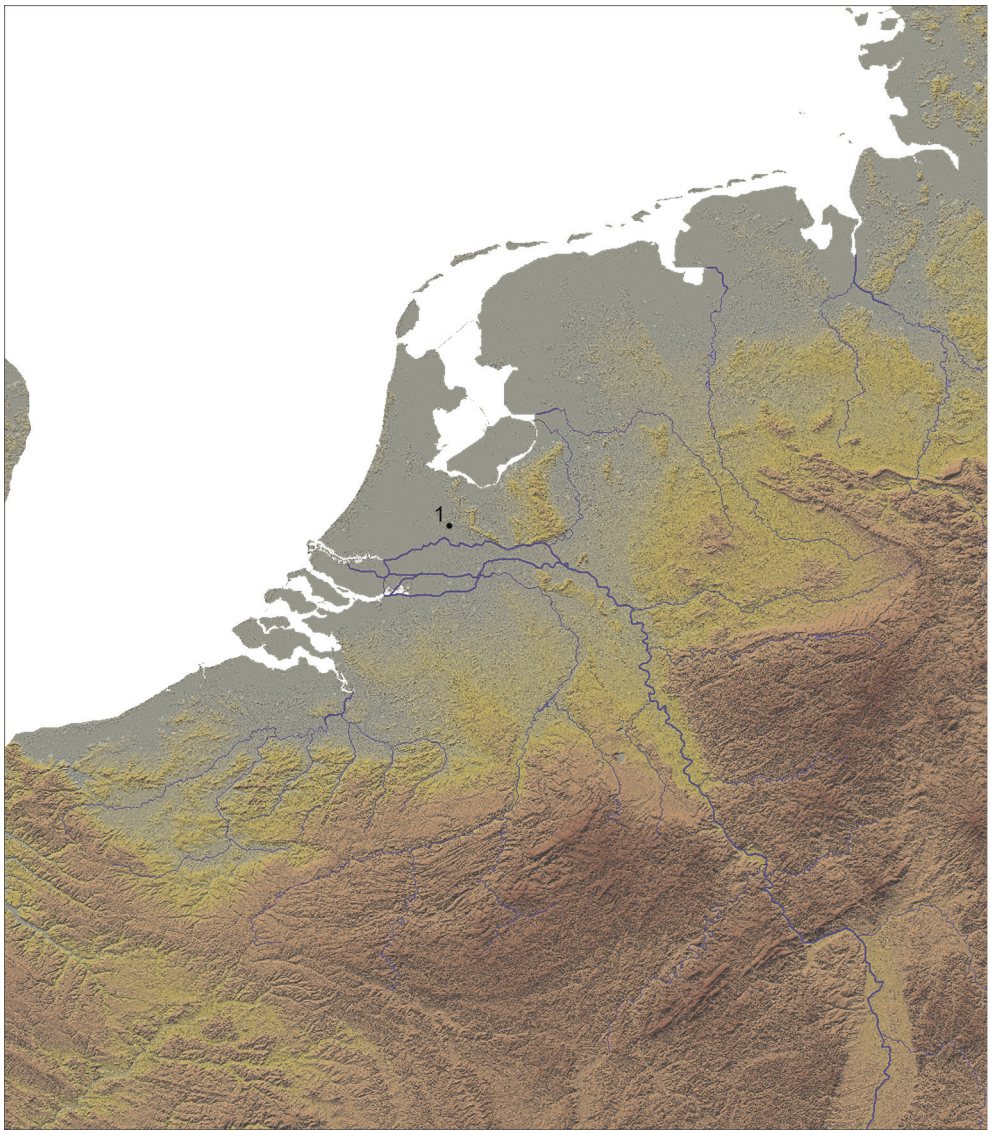

Fig. 1 Location of Vechten

After a short description of the finds, their position in the typo-chronological framework and their representativeness, we will briefly discuss the production and distribution of wooden combs in the Roman Empire. Drawing on the multi-vocality of material culture, we will discuss the commonly accepted gender and status ascription of combs. Our discussion is based on the analysis of literary sources, contextual analysis of archaeological finds and the use of analogy in order to arrive at a better understanding of the roles these multi-purpose objects may have played in structuring garrison life in a Roman army camp on the frontier.

2 Basic description of the Vechten combs

At present, twelve wooden combs have been documented from Vechten. Three are known from the former collection of the *Provinciaal Utrechts Genootschap* (Society for the Province of Utrecht). These were found during the 1892-1894 excavations conducted by the Utrecht archivist S. Muller Fzn. (cat.nos. 1-3; pl. 1.1-3, 2.1-3; for the location of these excavations immediately to the north of the *castellum*, Polak & Wynia 1991; Kloosterman & Polak 2007, map 3.). The remaining nine specimens were collected as surface finds in 1977 and have been in private

possession since (cat. nos. 4-12; pl. 1.4-12, 2.4-12). Like the vast majority of wooden combs found across the Roman empire, all twelve specimens from Vechten are made of boxwood (*Buxus sempervirens*), a close-grained wood species famous in antiquity for its resistance to splitting.[1] Typologically, all combs are of the double-sided H format with a significantly greater length than width, convex terminals and a lentoid section. Through a different number of teeth on each side of a central bar, these double-sided combs combine a coarse and a fine comb in one object. The long sides of the central bar often still show a straight or compass cut groove, which served as a guideline for the comb maker when sawing the teeth. In order to minimise breaking, in most cases a deliberate selection was made for radial billets, which were taken from the core of the living tree across the tree-rings to the exterior of the stem or branch. This allowed the comb maker to follow the direction of the tree-rings when sawing the teeth. Often the rings are still easily recognisable on the central bar. In cases where the combs have been broken, the breaking line coincides with the vertical line of a tree-ring boundary.[2]

Fig. 2: Satellite image of the area around Vechten with centre stage, in red, the site of the Roman army camp and immediately to the east the late 19th-century Fort Vechten, which constituted part of the New Dutch Water Line (Nieuwe Hollandse Waterlinie). The approximate find spot of the wooden combs, just to the north of the Roman fort and just to the south of the motorway A12, is marked by a red asterisk. As may be seen from the inset map on the right (after Vos 2009, fig. 2.7), this spot coincides with a former channel of the river Rhine.

3 Typo-chronology and representativeness

How special are our finds and how do they fit into the history of the comb? Through the ages, wood and a wide range of other organic materials have been employed for the production of combs (Ulbricht 2000; Cruse 2007). In addition, metal combs were manufactured from the Bronze Age onwards.[3] As far as wooden combs are concerned, few have survived from European prehistory and the surviving examples are, unlike our dataset, mostly of the one-sided type with just one row of teeth.[4] The oldest double-sided wooden combs stem from Neolithic

lake settlements in Switzerland (Tschumi 1949, 621, 644 with Abb. 247; Stotzer *et al*. 1976, 19-20, fig. 14), but the type first became widespread in the Roman era and then again between the 15th and early 18th centuries, when wooden combs, nearly always of boxwood, seem to have been articles of everyday use at all levels of society (MacGregor 1985, 74; Deschler-Erb 1998, 156; Cruse 2007, 21 f.).[5] After the Germanic incursions and the crisis of the late 3rd century AD, when supplies of ready-made box combs from the Mediterranean were interrupted, antler and bone were exploited as the dominant primary materials and combs were usually composed of a number of individually worked tooth-plates riveted between two side plates rather than produced from a single piece (MacGregor 1985, 82 ff.; Dijkman & Ervynck 1998, esp. 67-70, 76, fig. 44). In the Netherlands, such Late Roman and Early Medieval composite combs are especially well known from the Frisian *terps* (Roes 1963; Knol 1993, 81-84) as well as from Maastricht. From the 11th to the early 18th century combs were virtually exclusively of the double-sided type. Initially they were mostly single piece products, and this became the norm from the 14th century onwards. The latter series was quite comparable to the combs from the Roman era, though their shape is square rather than rectangular. Depending on the availability of the primary material and the predilections and spending power of consumers, different raw materials were exploited alongside each other. Antler remained in use until the 14th century, but from the 12th century onwards, when supplies of antler began to run dry, bone, cattle horn and wood gradually became predominant (MacGregor 1985, 32, 76 f., 81; Cruse 2007, 21). Ivory combs, which had not been unknown in the Roman period, became particularly popular among the affluent upper classes from the 14th century on, when trade companies had established a regular supply of elephant tusks from the African west coast. Manufacture of these luxury commodities became concentrated in the ports of trade around the North Sea, first in Paris and Dieppe, and then in London and Amsterdam (Baart *et al*. 1977, 130 ff., figs. 110-113; Rijkelijkhuizen 2008, 67 ff, with fig. 3.15; Cruse 2007, 211 f.).

From this brief review of shifting popularities of particular comb types and changing predilections in the choice of raw materials we may conclude that the double-sided boxwood combs from Vechten most likely belonged to the cheapest and most readily available comb form in the Roman empire. Similarly designed luxury items made of ivory, amber or precious metals, which were produced alongside the commonly available box comb, were probably only accessible to the privileged.

If this picture proves to be true, how then do we explain the fact that box combs are still a relative rarity in the display cases and archives of our museums? First, chance or lack of good preserving conditions certainly plays a role here. Since wood is normally only preserved under either permanently waterlogged or permanently dry conditions, the same objects made from the hard parts of animal carcasses such as antler, bone, horn or ivory generally have better chances of survival. On the other hand, the explosive increase in numbers in areas which have recently been the subject of systematic study shows that the relatively poor attention paid to wooden objects may be an important additional factor.[6] In her 1986 book on Roman toilet implements from Augst, Emilie Riha, for instance, was not able to mention a single item from this ancient town, and for the whole of Switzerland could refer to only one specimen from the *Schutthügel* – the rubbish dump – of the legionary base at Vindonissa (Riha 1986, 20). The lacuna is now gradually being filled by new studies. Fellmann's long-awaited exhaustive inventory of wooden objects from the *Schutthügel* contains no less than thirty-seven additional specimens (Fellmann 2009, 68 ff and Taf. 22-23), whereas recent publications of wooden finds from waterlogged contexts in the small towns (*vici*) of Oberwinterthur (Vitudurum) and Eschenz (Tasgetium) produced another thirteen (Fellmann 1991, 19-20, 33-34, Taf. 1.1-9; Brem, Steiner & Kesselring 1999, 132). Within two decades the number for Switzerland has thus gone up from one to 51! Similarly, the recent survey of wooden combs from Roman Britain by Paola Pugsley, resulting in a total of 153 specimens, raised the number of published examples from the famous Roman fort at Vindolanda from one to 61.[7] If still necessary, such developments make it abun-

dantly clear that whenever soil conditions are favourable – as they are in the damp sites of the above-mentioned army camps – wooden combs may be expected in very large numbers, especially in military and urban settlements. Against this background, it just seems a question of time until the soil of Vechten produces the next examples.

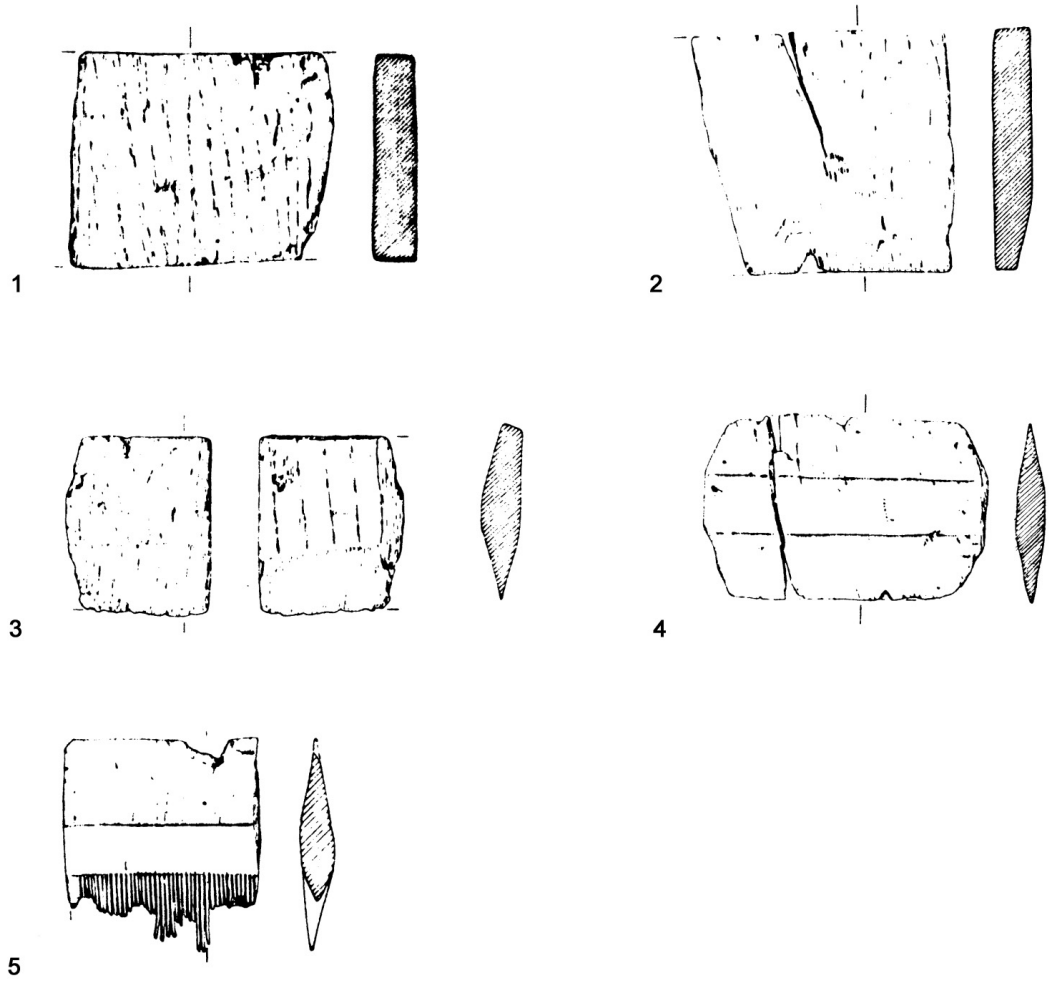

Fig. 3: Boxwood comb blanks from the Roman town of Altinum showing progressive stages of comb manufacture (scale 1:2). 1 fragment of rectangular blank of homogenous thickness; 2 fragment of rectangular blank with one long side being bevelled; 3 fragment of rectangular blank with both long sides being bevelled; 4 nearly complete rectangular comb blank with central bar and lentoid section but no teeth yet; 5 fragment of a half-finished comb with teeth on just one of the long sides (after Ferrarini 1992, 197, fig. 9.1-4, 6).

4 Production and distribution of boxwood combs

The choice of the wood species combined with the length of the combs – the incomplete comb no. 1 has a longest preserved length of 89 mm – provide important clues to the site of production. In the Roman period, boxwood does occur in Northern Europe, but only as shrubs which remain too small to produce billets of the right size (Van Rijn *et al*. 1998, 6 ff.). For combs with the length of our examples logs with straight grains and no knots are required. These conditions are only met by tall trees in an environment of dense forests in the mountainous areas of the Mediterranean (Mille 2006). Such habitats are to be found in Greece and Asia Minor (espe-

cially the Black Sea coast) in the eastern part of the Mediterranean, and in northern Italy, northern Spain and perhaps also the western part of southern France.[8] Moreover, as boxwood is best worked in green condition, transport of raw material over long distances seems unlikely.[9] We thus conclude that all Roman box comb finds from the northwestern provinces were imported as finished products from the Mediterranean (*contra* Pugsley 2003, 23) and northern Italy seems to be the most likely source of origin.

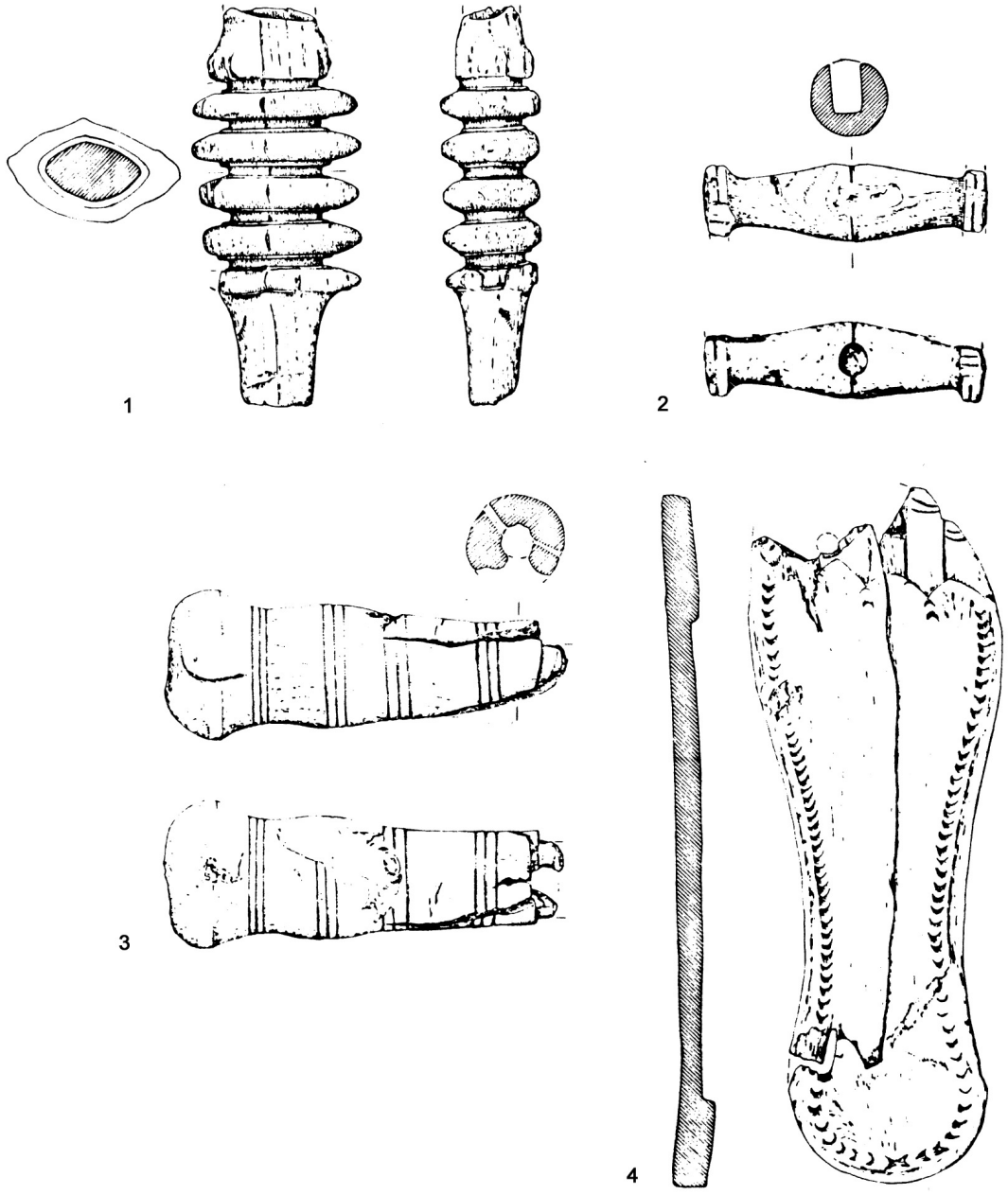

Fig. 4: Other boxwood products from the same workshop at Altinum, partly (1-3) made on the lathe. 1 Leg (?) of furniture; 2-3 handles of equipment; 4 sole (after Ferrarini 1992, 197, fig. 9.15 and 198, fig. 10.16, 10.18, 10.26).

Judging from the small number of inscriptions which mention the profession of comb maker (*pectinarius*), workshops that produced these combs were concentrated in northern Italy.[10] In-

terestingly, the only workshop that has been identified through finds of waste material of wood chips as well as half-finished combs is situated in exactly the same area, i.e. in the ancient town of Altinum, close to present-day Venice (Ferrarini 1992). The waste material, found in a stratified context dating from the first half of the 1st century AD, contained a total of 59 combs, all but one double-sided, in various stages of production. They allow for a detailed reconstruction of the manufacturing process. Since this unique find assemblage has not yet been discussed in the Anglophone literature, a short description of the five main stages may be useful. First, rectangular tablets were produced, all of about the same length (7-8 cm), width (5-6 cm) and thickness (1 cm) (fig. 3.1) Second, one of the long sides was bevelled, first on the front and subsequently also on the back (figs 3.2 and 3.3). The next step was to do the same for the other long side (fig. 3.4). What followed was the most crucial stage in comb manufacture, the sawing of the teeth. As fine teeth were more likely to break than coarse ones, the former were sawn first (fig. 3.5). Finally, the item was finished by sawing the coarse teeth on the other long side of the comb.

The finds from Altinum are not just important for the reconstruction of the *chaîne opératoire* of comb manufacture, they are also instructive for the organisation of the workshop. For besides the combs, a whole range of other boxwood finds comprising parts of furniture, sarcophagi, vessels, handles of equipment and even a small sole (fig. 4), were found in the same stratified deposit. If we assume that all waste material originated from one and the same workshop, its owner (and probably most of his fellow craftsmen as well) seems to have specialised in the working of boxwood rather than comb manufacture. The close grain and hardness of the wood species made it exceptionally well suited for working on the lathe. The skills and craftsmanship which were required for this in fact created the professional specialisation. Given the less sophisticated skills needed for comb manufacture, combs may well have constituted just a less valued side product, but one that perhaps still brought a nice income thanks to the high sales figures.[11]

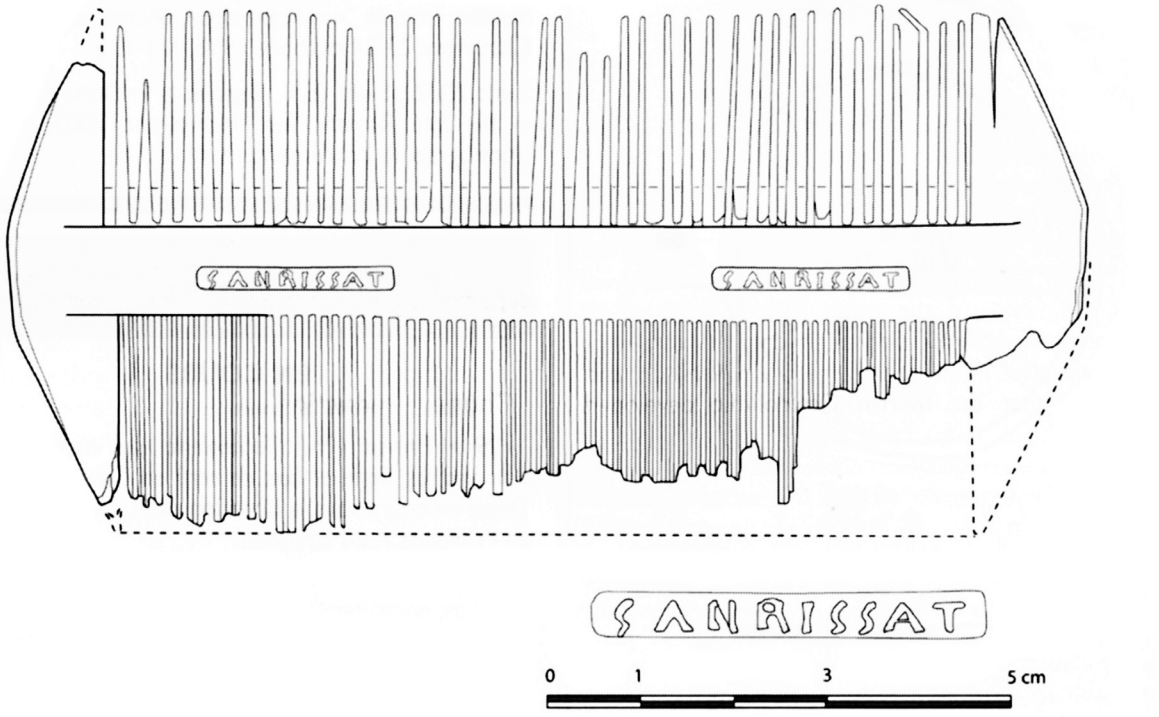

Fig. 5: Boxwood comb from Clermont-Ferrand bearing on both sides two (!) identical production stamps SAIIRISSAT or SAERISSAT (after Mille 2006, fig. 1).

Even though the workshop and its boxwood merchandise may have served a rather specialised niche of the market, it must have had quite a number of competitors both in the area and also beyond,[12] at least as far as comb making was concerned. This can be deduced from the first published find of a boxwood comb with a production stamp (fig. 5) as well as from the incredible numbers of box combs – as best exemplified by the Vindolanda and Vindonissa cases – that must have circulated in the Early empire. In view of the many close-knit cultural ties that connected northern Italy with the Rhineland, set in motion by military recruitment and veteran settlement, there seems little doubt that the combs from Vechten actually originated from one of these northern Italic workshops.

Finally, it is interesting to note that the imported specimens incidentally served as a model for local imitations in wood species which were readily available in the region (table 1).[13] However, at the same time, the importance of box combs is an indication that the success of this local comb manufacture was limited. The advantages boxwood had both in the manufacture process as well as when using the comb – box combs normally would not split and thus would not catch individual hairs when combing – easily outbalanced the higher costs of transport.

Findspot	Type of site	Wood species	References
Nijmegen	military settlement urban settlement	unknown	unknown number of finds kept by the National Museum of Antiquities, Leiden; Van Rijn 1993, 181 f
Vechten	military settlement	*Buxus sempervirens* / boxwood	12 specimens; catalogue, this study
Valkenburg aan den Rijn	military settlement (vicus)	*Buxus sempervirens* / boxwood	2 specimens; Van Rijn 1993, 179-181, 185, cat.no. 49-50, fig. 27.49, 27.50
Cuyk	small town	*Buxus sempervirens* / boxwood	publication in prep.; oral information P. Seinen, December 20, 2009
Schipluiden-Harnaschpolder	rural settlement	*Buxus sempervirens* / boxwood	Van Rijn 2006, 172-173
Schagen-Muggenburg	rural settlement	*Cornux mas* / kornoelje	Therkorn 2004, 36, 303-4 [table 7a,c], 327
Vlaardingen-Hoogstad	rural settlement	*Betula* / birchwood	Schelvis 2003
Frisia, exact findspot unknown	rural settlement (terp?)	Unknown, probably boxwood	National Museum of Antiquities Leiden, inv.no.: vdT zn 85 (described as medieval!); unpublished

Table 1. Roman wooden combs from the Netherlands according to finds context.

5 Uses of the comb: the mundus muliebris

Who used the combs in the fortress at Vechten and for which purpose? When writing about combs, Roman archaeologists and ancient historians have nearly invariably associated these 'toilet articles' with female beauty and the *mundus muliebris*, the world of women. Such an interpretation is in striking contrast with many other periods of the European past, when combs appear to have been either ungendered or tokens of an exclusive *male* identity. From the Middle Bronze Age through to the Iron Age as well as in the Middle Ages, combs and other grooming tools often served as references to masculine beauty and as such became part of the grave furnishings arranged around the dead bodies of warriors (Treherne 1995; Voutsaki 2010, 83; Mylonas 1973, 349 f.; Dickinson 1977, 45, 48 f., 84; Williams 2003, esp. 103 f., 108 f., 114). The question then comes to mind why there would have been nothing of an equivalent in the Roman interlude? Moreover, the numerous finds that have recently been reported from various Roman army camps make one feel uneasy about the strengths of the traditional interpretation. Admittedly, the presence of women in and around Roman army camps is no longer a point of discussion (Allison 2006; contributions in Brandl 2008) and some of the combs from such military contexts may indeed have been in use by the wives of officers or the concubines of ordinary soldiers, but can they account for the numbers that have been found? In view of these

thoughts, one is tempted to consider whether the combs were perhaps rather used by the soldiers themselves. Two questions then force themselves upon us: first, what is the prevailing interpretation based on, and to what extent can its underpinnings stand the test of criticism today? And second, what alternative explanations are on offer? In the remainder of this paper, we will briefly review the purposes for which the combs were used by women and men. By combining a close reading of the available historical evidence with a contextual analysis of the archaeological finds as well as with analogical reasoning, we hope to arrive at a more nuanced explanation of Roman comb finds.

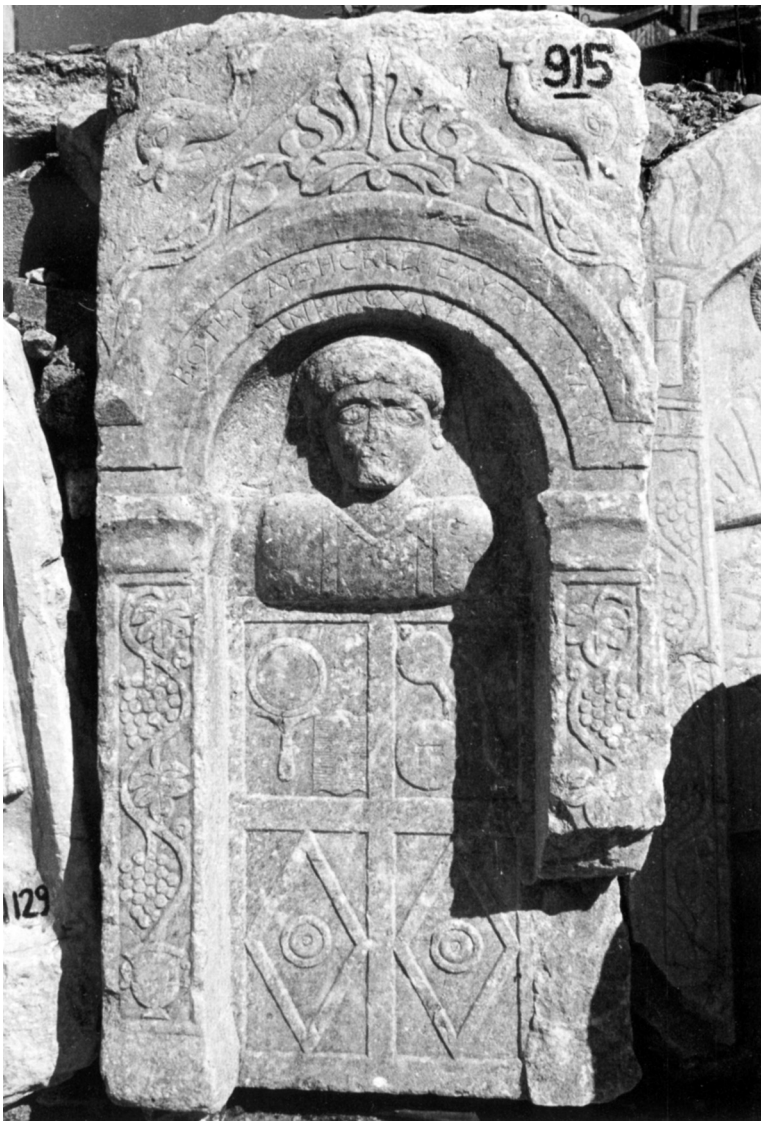

Fig. 6: Marble funerary monument from Çömlekçi in Asia Minor, erected by Botrys for his wife Auxese. Under the female bust, a door is depicted with representations of a mirror and comb on the upper panels. Also visible are a spindle and distaff and a lock plate, symbolizing the female virtues of physical beauty and domestic diligence (after Waelkens 1986, pl. 11.214).

The double-sided H-combs are multi-purpose objects which were primarily used for various forms of bodily grooming.[14] Recent studies most often mention styling and delousing as their main functions (Pugsley 2003, 25; Fellmann 1991, 20; *idem* 2009, 69; Cruse 2007). While in those studies the question of a gendered employment of the combs is never posed (even though the finds context gave every reason to it), it is implicitly assumed that the first-mentioned way of use (styling) referred to women, and the second (delousing) to men. Neither the idea that men could have groomed their hair, nor, conversely, that the hair of women could have been in-

fested with lice, seems to have been considered an option.[15] As we will see, this stereotyped representation can hardly have been prompted by a lack of ancient texts on comb uses by men, but seems more likely to have been generated by a combination of a selective and uncritical reading of the evidence and the implicit assumption that combs (and other items of material culture), regardless of their social context of use, always carried the same status or gender value. The origins of this way of thinking reach back to the dawn of Roman archaeology, as demonstrated by the earliest descriptions of Roman combs from Pompeii: without much ado these were simply ranged as '*Gegenstände des weiblichen Schmuckes*' (Overbeck 1884, 452 f.).

If such early straightforward interpretations may have been inspired by contemporary views on women rather than by the limited archaeological evidence that was available at the time, today there is a wealth of contextual data that supports the association of combs with women and female beauty. Representations of combs and other grooming tools, for instance, seem to figure nearly exclusively on memorials for women, although marked regional differences may be observed. In Asia Minor, for instance, representations of isolated combs, mirrors and oil flasks, next to a spindle and distaff and a wool basket, are common ways to portray aspects of female identity (Waelkens 1986) (fig. 6). In the funerary iconography of the Roman West on the other hand, such detached depictions of female grooming implements do occur (Boppert 1992, 82 f., Taf. 25; Zimmer 1982, no. 90 = *CIL* XI 1471; Goethert 1989, 283), but here the virtue of female beauty is more often expressed by scenes taken from female daily life, especially the grooming of the hair by a servant (fig. 7) (Baltzer 1983, 64 ff, esp. 67, 141, Abb. 106). From the world of religion, two inscribed votive reliefs from Laconia dating from the 2nd century A.D. may be cited. They were dedicated by two priestesses. One of them shows two combs, the other one a double-sided comb next to a range of other objects from the women's world. Although the reliefs were found in a secondary context, there are strong indications for a provenance from a nearby sanctuary to Demeter. The dominance of women and apparent exclusion of men suggests that the cult of the sanctuary was directed towards women's needs. The reliefs with the combs and other toiletry items most probably commemorated the grooming of the priestesses, possibly for a specific festival (Walker 1989).

When it comes to the archaeological finds themselves, property inscriptions such as the one on the unprovenanced ivory comb from the British Museum in London are rare, but as a rule refer to female owners.[16] Convincing evidence for the comb as a female grooming tool is also provided by exceptional finds such as the beauty case from Cumae (Aßkamp *et al*., 2007, 69, Abb. 6, 273 f., cat. no. 8.14) which contained a double-sided bone comb, a bronze mirror, a gold ring, two silver brooches, a spindle and a hairpin. Given the precious jewellery and the case's rich decoration with carved ivory plates, the owner of the case must have been a rich upper class female. Similarly and more importantly, long lists of comb finds from more prosaic burials may be cited as references to the same virtue of female beauty (e.g. Goethert 1989; Bridger & Kraus 2000, 49, 59, 75-76). One example that deserves special attention here is an exceptionally well preserved burial, discovered in the late 19th century at Martres-de-Veyre (Puy-de-Dôme) (Audollent 1922; Vallat 1994). A small, 80 cm long wooden coffin contained the corpse of a young girl no older than six years. The burial was situated in an area surrounded by mineral water springs, the carbonic acid gas of which had affected the partial preservation of the body's skin, hair and flesh. Among the furnishings were three wooden pyxides, a wickerwork basket filled with fruit and a spindle and distaff with a ball of wool. According to an eye-witness, the girl had '*une chevelure abondante, relevée en touffe sur le front et retenue à la partie supérieure de la tête par un peigne de buis à double range de dents*' (Audollent 1922, 287; *cf.* Vallat 1994, 183, 186: inv. no. 987.23.22). The find is not just exceptional for its amazing preservation conditions, but also for the unique proof it provides of a double-sided box comb used for the dressing of hair. The comb served to fasten the girl's hair high at the back of her head, a usage which has until recently been unknown in the Roman period (Lafaye 1904, 364; Fellmann 2009, 72; Pugsley 2003, 25).

Fig. 7: Detail of the left side of the so-called Elternpaarpfeiler from Neumagen with a 'toilet scene' in which a servant is styling the hair of a seated matrona (photo T. Derks). That the grooming scene functioned as a gendered representation of female identity becomes most clear from the fact that the opposite right side shows scenes which are emblematic of male identity – a man on horseback returning from a hunt as well as a landlord doing the book-keeping – whereas the central front panel shows man and woman as the married couple who gave the monument its name (cf. Von Massow 1932, 158-163, pl. 31-34, Abb. 106).

The above-cited examples of both comb finds and iconographic depictions of combs provide strong arguments for the comb as a marked symbol of female identity, especially in the ritual context of the funeral. Against this background, the apparent absence of combs, real or depicted, on male funerary monuments or in tombs for men, is most striking. Since a systematic inventory of comb finds and comb representations from the entire Roman empire was clearly beyond the scope of this paper, it remains for future research to challenge the validity of this preliminary observation, but on the basis of the evidence discussed so far we may conclude that in the Roman period combs played no significant role in the construction of male identity.

6 Comb uses in a community of soldiers

Assuming that the wooden combs from Vechten were mainly used by the soldiers, how then do we explain their significance? Even if the previous section has learned us that in the Roman

period combs were hardly relevant for constructions of male identity, that of course does not exclude that men used combs for grooming their hair on an everyday basis. Moreover, from Martial's mocking question (Mart. 14.25) what purpose a comb would serve for a baldy, we may infer that normally men were indeed habituated to comb their hair. In the same way, Juvenal's comment that the hair of centurions in the Roman army – who counted as physical, uncouth and philistine – rather remained 'untouched by the comb' (Juv. 14.194) is best read as a satiric remark, the implication being that civilised men normally would comb their hair (*cf.* Pers. 3.77; Lee & Barr 1987, 112 f.; Courtney 1980, 578 f.). We come back to this below.

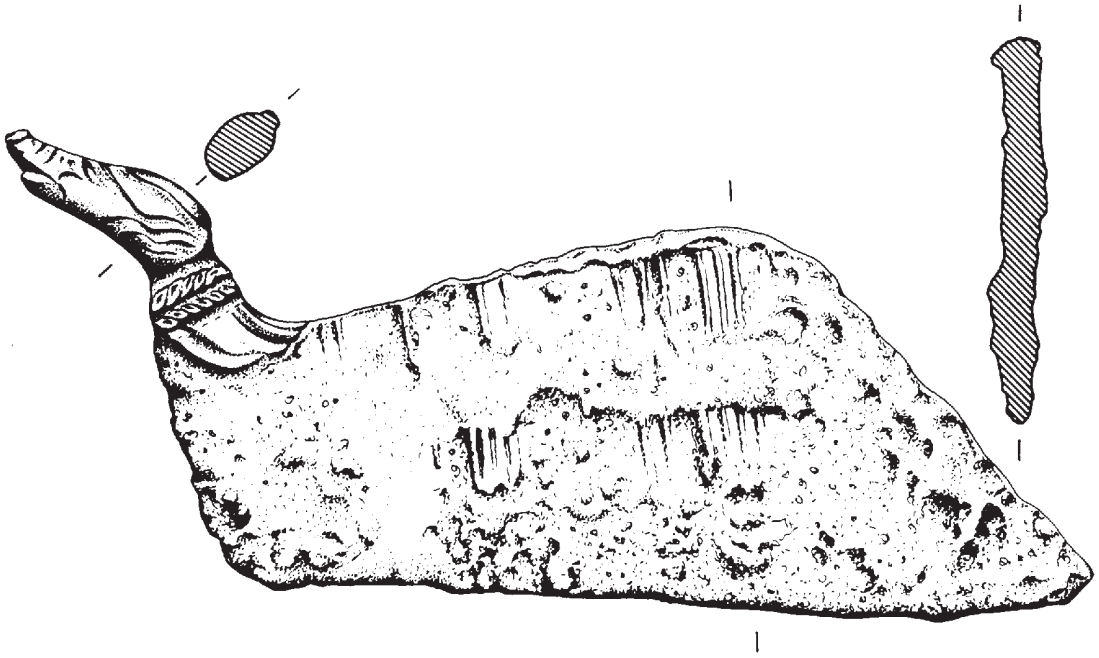

Fig. 8: Broad-bladed iron razor with dolphin-shaped bronze handle and imprint of a lost double-sided comb in wood or bone from a barber's grave at Cologne (after Friedhoff 1991, pl. 88.2)

Apart from styling, the double-sided comb with a coarse and fine row of teeth was perfectly suitable for cleaning, especially delousing. Once the hair had been disentangled with the coarse side, it could be cleaned from dust, soil, sebum, dandruff, and parasites like lice and nits with the fine side. Lice were a problem in antiquity (*cf*. Mumcuogly 2008) and in their recently published book on Roman toilet implements in Britain, Hella Eckhardt and Nina Crummy (2008, 32) rightly posit that "[i]n the absence of shampoos, combs were the main implements for cleaning the hair and scalp, and for removing lice" (*cf.* however Plin., *HN*, 28.163, who discusses recipes for the treatment of infected hair). That combs were indeed used for this purpose has further been proven by entomological research, which in a number of cases led to the discovery of remains of head lice (*Pediculus humanus*) caught in the combs.[17] Army camps would have had large numbers of troops living together in a small area and infestations of lice (and other parasites) may have been as common as among comparably accommodated communities from more recent times.[18]

Men could also use combs to groom hair on their chin and cheeks, i.e. to comb or trim their beard (Plaut., *Capt*. 268; Juv. 14.216). A barber's grave from Cologne, which contained a com-

plete set of equipment consisting of two sets of shears, a razor, a towel and at least one double-sided comb (fig. 8) (Haberey 1932; Friedhoff 1991, 192; Boon 1991, 25 f.), proves that the practice of trimming the beard "over the comb" (*per pectinem*) was indeed well-known in even the remotest provinces of the empire. But the assumption that soldiers in a Roman fort used a comb for this purpose is not without problems. Apart from the basic question whether each soldier trimmed or shaved his beard himself or had this done by a barber (*tonsor*), with the exception of Niederbieber, no Roman army camp has produced shears in any substantial numbers (Haberey 1932, 130, note 3, mentions four single blades; Gaitzsch 1982, 37 reproduces six and gives another three of a different type, all from Niederbieber). As long as it remains unclear whether the low numbers are simply just a matter of preservation (shears are mostly of iron, which does not survive very well) or represent a true picture, it seems safe not to assume that every soldier had his own pair of shears. So even though we do not want to exclude the option of soldiers incidentally using a comb when trimming beards, most combs from Roman forts are unlikely to have been used for this purpose on any regular basis.[19]

If Roman soldiers, just like the warriors from the preceding and following periods, were used to combing and grooming their hair and beard, why is it so difficult to materially identify these grooming habits? One important difference between the late prehistoric and medieval warriors and the Roman soldier is the latter's institutional embedding in an imperial army. As Paul Treherne argued, the goods and practices that sustained the lifestyle of the heroic warrior exhibited a fundamentally *personal* character (Treherne 1995, 128). The arena of the warrior was the personal combat scene rather than the battlefield, the social context of his warlike activities consisted of the personal retinue of a warrior elite rather than a state army and his armoured and well-groomed body formed the natural expression – if not the very 'embodiment' – of his personal achievements as a warrior rather than an adopted uniform. As part of this emphasis on the aesthetics of the adorned body, the Homeric, Celtic and Frankish warrior grew his hair long and delighted in its grooming (Treherne 1995, 126). The Roman soldier, however, was part of the professional army of an empire and the bond between him and his regiment was "an *impersonal* one, relating soldier to institution rather than soldier to soldier" (Manning 1991, 458). As a consequence, the soldier's bodily appearance may have been dictated by disciplinary rules set by the army authorities rather than by personal choice.

As army psychologists teach us, the strike power of a state army is at least as much dependent on the morale, cohesion and *esprit de corps* of its constituent units as on the personal war exploits of the individual soldier (Manning 1991; Driessen 2005). Good commanders will try to strengthen these values by taking care of the unit's physical and mental health as well as by cultivating a sense of unity and community. The latter may be enforced by the imposition of a shared culture, including cultural practices such as military parades and unified forms of bodily appearance. In particular, in a large and multi-ethnic army such as that of the Roman empire, a shared culture may urge the individual soldier to identify with the overarching institution and find a source of pride in being part of it. The number of combs retrieved from military settlements such as Vindolanda and Vindonissa suggests that in the Roman period, just as in the early modern and contemporary state armies (*cf.* Cruse 2007, 151 ff discussing, *inter alia*, the 85 combs found on board of the Mary Rose, King Henry VIII's flagship which sank off Portsmouth in 1545), the comb had become a standard item of the soldier's equipment.[20] It became the indispensable tool for bringing the body in compliance with the army's disciplinary rules regarding physical appearance. The visual image of unity that resulted from it may have had two effects. While it may have increased awe and fear on the part of the enemy, it fostered pride and contributed to a feeling of invincibility on the part of the Roman soldier.

7 Conclusion

Roman wooden combs are still a relatively neglected class of material culture, both in the field and in analysis. The preservation of the Vechten combs is mainly due to the efforts of the present owners of the private collection, one of whom has a professional background as a carpenter. In addition, publications on similar objects have been rather descriptive and restricted in terms of interpretation. We hope to have shown that through a contextual and interdisciplinary analysis these artefacts can shed light on the organisation of their production and exchange as well as the consumers and the ways they used them.

While the number of published boxwood combs from the Roman empire is still relatively low, the exceptional conditions of the Egyptian desert and northern European waterlogged sites such as Vindolanda, Vindonissa and Vechten provide helpful windows for assessing the true size of their circulation. The conclusion forces itself upon us that they must have been ubiquitous. Moreover, they were used by all members of society, from the well-educated audience of the Roman poets who metaphorically referred to the combs by the wood species from which they were made (*cf.* note 1) to the ordinary soldiers in the barracks of Roman forts. While elite women used them for styling their hair into the elaborate hair styles we know so well from Roman female portraits, their main use may have been far more prosaic. The double-sided comb which united a fine and a coarse comb was perfectly suited for disentangling and cleaning hair. The ready acceptance of the comb in the provinces of the empire, in areas where the implement had hardly been known in prehistory and where it had first become available thanks to the new possibilities of long-distance exchange, is a sign of the rapidly changing ideas on personal hygiene and bodily appearance (*cf.* Hill 1997). Among the new practices of body care is the regular cleaning of the hair and the scalp. In some social contexts, such as army camps in which men were packed together and contamination of the community with lice and other parasites may have been easy and frequent (*cf.* Allason-Jones 1999), the comb may have been a very welcome implement. On the basis of their frequency in Roman forts, it has been argued that each soldier possessed his own comb, whether privately purchased or provided by the army. The analogy with early modern or contemporary state armies suggests that the appearance of the soldier's body was subject to disciplinary rules of the army authorities rather than just a matter of personal choice. Despite the marked absence of combs in male tombs or on funerary monuments for men, combs from military settlements show the importance the comb had for the construction of male identity, at least for that part of the empire's male population that joined the army.

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This article is a result of an inventory of another category of wooden artefacts from Vechten, the wax tablets, on which we hope to report in the future. Our special thanks go to B. and W. Elberse (Bunnik and Hilversum) for their unreserved readiness to make the objects in their private collection available for research. In addition we want to thank a number of people who helped us in various stages of the research. Mrs J. Hees was most helpful in providing information on the objects in the former collection of the *Provinciaal Utrechts Genootschap*, now in the possession of the Municipality of Utrecht. The wood species of the combs was determined by dr L.I. Kooistra (BIAX *Consult*, Zaandam), whom we also wish to thank most gratefully for discussions on wood matters. Caroline Vermeeren (BIAX *Consult*, Zaandam) brought new finds of combs from the Fayum excavations to our notice and allowed us to mention these in this paper. Howard Williams (Chester) kindly sent us a copy of his article in *Early Medieval Europe* that was otherwise unavailable to us. All photographs and drawings included in the

plates are the work of B. Brouwenstijn (VU University Amsterdam). Dr M. Groot edited the English text.

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Notes

1. Plin., *HN* 16.212; Ulrich 2007, 245 ff. That boxwood was the preferred wood species for combs is most evident from the classical literature in which the term '*buxus*' was used as a metaphorical synonym for a comb, *e.g.* Ov., *Fast.* 6.229; Juv. 14.194; Mart. 14.25. In this article, abbreviated references to classical authors follow those in the Oxford Classical Dictionary, 3rd edition, Oxford 1996.
2. We owe this observation to Dr. Laura Kooistra (BIAX *Consult*, Zaandam).
3. For Roman period bronze combs: Donaldson 1818, part 2, pl. 78 = Clarke 1847, 323 f); Pugsley 2003, 23, referring to an example from Chesterford; silver combs: Virgili 1989, 74, without quoting examples! Lead: Antiquarium Communale in Rome: inv. no. 16246; Virgili 1990, 99, cat. no. 147.
4. E.g. the wooden comb from the Neolithic lake settlement of Auvernier-'Brise-Lames': Schifferdecker 1977, 17, fig. 16. Such combs are to be distinguished from the so-called 'long handled combs' which predominantly date from the Iron Age and were used in manufacturing textiles. *Cf*. Tuohy 1999, spec. 97 ff.
5. For rare examples of one-piece double-sided Roman combs made from bone, see Overbeck 1884, 453, fig. 252i; De Caro 1996, 276, online available at http://marcheo.napolibeniculturali.it/itinerari-tematici/image-gallery/RA134#); Petit & Santoro-Bianchi 2007, 67 (all from Pompeii); Simonett 1972, 116 f. (cemetery Locarno-Muralto, loc. Passalli, grave 37); Virgili 1990, 113, cat. no. 221/19 (Costanza, Archaeological Museum, inv. no. 12772). Even more rare are similar types made of horn (Pugsley 2003, 23, citing an example from Fishbourne), amber (Koster 2010, 183 and pl. 12.40), and silver and lead (*cf.* above note 3). The Pompeian bronze combs are single-sided.
6. *Cf*. Pugsley 2003, 16: 'The situation may reflect the scarce degree of attention given in general to these artefacts. Far too many combs are inadequately published, if at all.'
7. Pugsley 2003, 145 ff (appendix 1: C001-C060; C132). In popular publications on Vindolanda, the excavator mentioned 'over twenty fine box-wood combs' without describing them individually (Birley 1977, 123). The extraordinary preservation conditions at Vindolanda are further illustrated by the discovery of one of the combs in its original leather case (Birley 2009, colour plate 7).
8. There is some discussion as to whether the boxwood trees in southern France were tall enough, those which presently grow in the *garrigues* definitely are not. On the methodological problems of establishing the extension of the tree's natural habitat, Decocq *et al*. 2004.
9. Of course, raw material *was* transported (*cf.* the box logs in the Comacchio ship: Berti 1990, 53, and fig. 2), but this mostly involved short distances from the tree's natural habitat to the workshops in town. According to the ancient sources, the boxwood at the Altinum workshop (see below) was readily available in the town's hinterland (Ferrarini 1992, 192, with the observation that the box tree belonged to the '*elementi consueti del paesaggio cisalpino*').
10. From Pula we know a *faber pectinarius* (*CIL* V 98) and from Asti a *refector pectinarius* (*CIL* V 7569; Pugsley 2003, 25 f, 177-9). Other *pectinarii* are known from Reggio nell'Emilia, Brescia and Ateste, but through the contextual association with *lanarii* and/or *carminatores* it will have to remain uncertain whether in those cases the term referred to wool combers rather than comb makers. *Cf*. Frayn 1984, 150, and note 4.
11. In the Diocletian price edict, the maximum price for a female's (!) comb was set at 14 *denarii*.
12. Even if reported finds from the eastern provinces are scarce today, with the Egyptian desert for obvious reasons constituting an exception (*cf.* for instance, National Museum of Ireland, inv. no.

1904:572: one double-sided boxwood comb from Oxyrynchus; and Gazda 1983, fig. 44: two combs from Roman Karanis, online available at http://www.umich.edu/~kelseydb/Exhibits/Karanis83/KaranisExcavation/KaranisExcavation.html), an iconographic by Waelkens (1986) suggests a widespread circulation of such combs in this part of the Roman empire. Moreover, several references in the classical sources point to Paphlagonia as a source of boxwood combs: *cf.* Ovid., *Met*. IV.311, Cat. 4.13; Verg., *Georg*. II.437.

13. The same is true for Roman Egypt: during the 2009 excavation campaign at Karanis in the Fayum carried out by the Universities of Groningen and Los Angeles under the direction of Prof. R. Cappers and Prof. W. Wendrich, four double-sided comb fragments were found, three of which are imported combs made of boxwood (inv. nos. 14718, 15296, 16544), while the fourth (inv. no. 14207) is a locally manufactured product made from olive (*Olea europea*), a tree common in the area. Pers. comm. C. Vermeeren (BIAX Consult, Zaandam).
14. The find of a coarse animal hair, perhaps of a cow, in a comb from Vindolanda (Birley 1978, 149, Abb. 60; 143 f.) must thus have been the result of secondary use (MacGregor 1985, 205, note 1; Pugsley 2003, 25). For the grooming of horses and other animals with the help of brushes, Pugsley 2003, 24; Fellmann 2009, 80.
15. The point is nicely illustrated by Birley's short discussion of the 'over twenty fine box-wood combs' from the pre-Hadrianic forts at Vindolanda. According to him, these were all 'of the sort one would associate with fashionable women's hair.' Birley 1977, 123; *cf.* also *ibid*, 77.
16. *Guide* 1920, 138 f., no. 400. Modestina is the supposed owner of the comb. The meaning of the abbreviation at the end is unclear. Some have suggested reading the farewell as VALE. Such a reading, however, assumes an engraving error on the comb maker's part and suggests that the implement was especially commissioned for the funeral, both of which seem unlikely.
17. Combs with lice were found in the army camp of Ribchester/Bremetenacum: Fell 1996; Pugsley 2003, 148 f: C119-C120; the small town of Oberwinterthur: Brem *et al*. 1999, 132; and the rural settlement of Vlaardingen-Hoogstad: Schelvis 2003. Isolated headlice from Roman contexts are further known from the *colonia* of York (Kenward 1999, 912) and from Herculaneum (Capasso & Di Tota 1998).
18. One could think of medieval cloister communities (Bernström 1966) or modern school classes.
19. If one was willing to accept that combs were also used for cutting the hair, the problem remains essentially the same.
20. Whether they were bought centrally by the army and handed out to every soldier, perhaps with deduction of costs, or purchased by the soldier himself as part of his private possessions remains to be seen. The variety in comb forms may suggest the latter but, alternatively, the army may have bought combs from different workshops.

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Catalogue

All items have been drawn and photographed. Numbers in the catalogue correspond with those in plates 1 and 2.

1) Collection municipality of Utrecht, former PUG-collection, inv.no. 9359. Fragment of a double-sided boxwood comb with 68 fine teeth and 34 coarse teeth still preserved, most of them intact. Polished (?) curved central bar with a biconical, instead of the more usual lentoid section. Bar width of 24 mm at the end tapering to some 10 mm near the centre; at the back, deep transversal cut over the central bar (nearly broken) as well as two additional instances of minor damage on an otherwise well preserved example. Left side complete with compass cut terminal, right end broken. Tangentially sawn billet. Length: 89 mm. Width: 66 mm. Found during excavations by the PUG in 1893. Unpublished, mentioned in Muller 1895, 152 [= booklet p. 31].

2) Collection municipality of Utrecht, former PUG-collection, inv.no. 9361. Three fitting fragments of a double-sided boxwood comb with 37 intact fine teeth as well as 18 coarse teeth, most of them broken. Plain rectangular bar. Left side complete with sinuous terminal, right end broken. Some teeth have been sawn just beyond the guidelines that were meant as their baseline. Radially sawn billet. Length: 50 mm. Width: 63 mm. Found during excavations by the PUG in 1893. Unpublished, mentioned in Muller 1895, 152 [= booklet p. 31].

3) Collection municipality of Utrecht, former PUG-collection, inv.no. 9361a. Fragment of a double-sided boxwood comb. Plain but curved central bar. Both sides incomplete. Still 41 fine teeth present, all complete, as well as 23 coarse teeth, 3 of which are broken. At their bases, all teeth have been sawn exactly until the guidelines cut on the central bar. Radial segment. Length: 50 mm. Width c. 63 mm. Found during excavations by the PUG in 1893. Unpublished, mentioned in Muller 1895, 152 [= booklet p. 31].

4) Private collection, W. en B. Elberse, Bunnik. Long, nearly complete double-sided boxwood comb consisting of two fitting pieces. Right terminal D-shaped, left terminal partly gone but undoubtedly of the same shape. Narrow (width 9 mm) rectangular central bar with clear-cut guidelines on both sides. With 57 fine and 23 coarse teeth, all teeth are still present, nearly half a dozen of the coarse ones and just one fine tooth in complete shape. Radially sawn billet. Length: c. 72 mm. Width: c. 45 mm. Found 1977? Kept in unconserved, wet condition. Unpublished.

5) Private collection, W. en B. Elberse, Bunnik. Fragment of a double-sided boxwood comb with narrow central bar (width 7 mm). Both left and right end lost. Preserved teeth: 16 coarse teeth and 25 fine ones, all of them broken. Though in many ways very similar to the fragment cat.no. 6, judging by their differential thickness both fragments certainly belong to different specimens. The grooves which were cut as guidelines for the sawing of the teeth are neatly respected. Made from a radially sawn billet. Length: 30 mm. Width: 31 mm. Found 1977? In bad state of preservation: much of the wood has already decayed. Kept in unconserved, wet condition. Unpublished.

6) Private collection, W. en B. Elberse, Bunnik. Fragment of a double-sided boxwood comb with plain and narrow central bar (width 7 mm). Beginning of right terminal preserved, left side lost. Preserved teeth: 11 coarse teeth, among which 4 complete, and 23 fine teeth, all of them broken. Though in many ways very similar to the fragment cat.no. 5, judging by their differential thickness both fragments certainly belong to different specimens. Made from a radially sawn billet. Length: 21 mm. Width: 46 mm. Found 1977? In bad state of preservation, though the wood is harder than that of cat.no. 5. Kept in unconserved, wet condition. Unpublished.

7) Private collection, W. en B. Elberse, Bunnik. Fragment of a double-sided boxwood comb with plain curved central bar; width of bar c. 26 mm at the broken right end and c. 18 mm in the centre. Both left and right end lost, originally probably with compass cut terminals. Preserved teeth: 24 coarse teeth, among which 5 complete, and 38 fine teeth, all broken. The grooves that were cut as guidelines for the sawing of the teeth are crossed by all coarse as well as most fine teeth. Tangential segment. Length: 58 mm. Width: 53 mm. Found 1977? The object is very vulnerable to breaking as at about half length and towards the right end a vertical crack is visible. Kept in unconserved, wet condition. Unpublished.

8) Private collection, W. en B. Elberse, Bunnik. Two fitting fragments of a double-sided boxwood comb. Broken along the boundary between two tree rings; each of the two fragments shows an additional crack on the front which may eventually lead to further breaking. Curved central bar secondarily perforated near the right end. Bar width from c. 28 mm at the right end tapering to c. 17 mm at the break. Preserved teeth: 17 fine teeth (9 complete) and 10 coarse ones. Radially sawn billet. Length: 26 mm. Width: 58 mm. Found 1977? Kept in unconserved, wet condition. Unpublished.

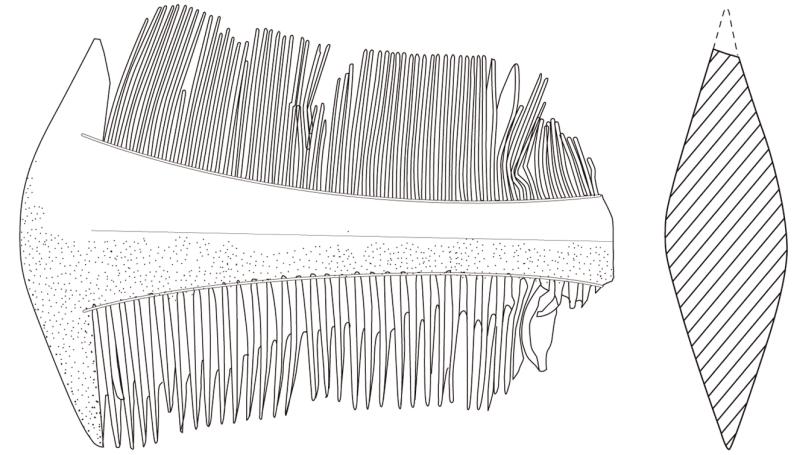
9) Private collection, W. en B. Elberse, Bunnik. Fragment of a double-sided boxwood comb with straight central bar and small D-shaped terminal. On both sides of the comb a circular decoration has been punched near the end of the central bar. Preserved teeth: 24 fine teeth (9 complete) and 10 coarse ones (2 complete). Radially sawn billet. Preserved length 28 mm. Width of bar 7 mm. Found 1977? Treated with unknown preservative which caused blackening of the object. Kept in feeze-dried condition. Unpublished.

10) Private collection, W. en B. Elberse, Bunnik. Fragment of a double-sided boxwood comb with straight central bar; both ends missing. Preserved teeth: 33 fine teeth (29 complete) and 17

coarse ones (15 complete). Tangentially sawn billet. Preserved length 38 mm. Width of bar 6 mm. Found 1977? Kept in feeze-dried condition. Unpublished.

11) Private collection, W. en B. Elberse, Bunnik. Fragment of a double-sided boxwood comb with straight central bar; both ends missing. Preserved teeth: 22 fine teeth and 12 coarse ones most of which are complete. Radially sawn billet. Preserved length 21 mm. Width of bar 6 mm. Found 1977? Kept in feeze-dried condition. Unpublished.

12) Private collection, W. en B. Elberse, Bunnik. Tiny fragment of a double-sided boxwood comb with small pronounced central bar. Part of one terminal has been preserved; on the coarse side two cracks in the terminal show its fragile condition. Also parts from what is seen here as the back side of the comb have been lost. Preserved teeth: 6 fine teeth recognisable, and 5 coarse teethe, none of them complete. Tangentially sawn billet. Preserved length 12 mm. Width of bar 6 mm. Found 1977? Kept in feeze-dried condition. Unpublished.



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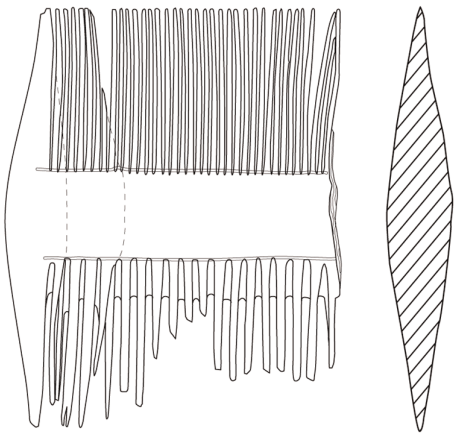

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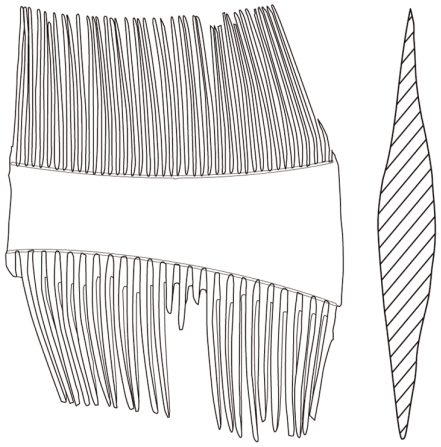

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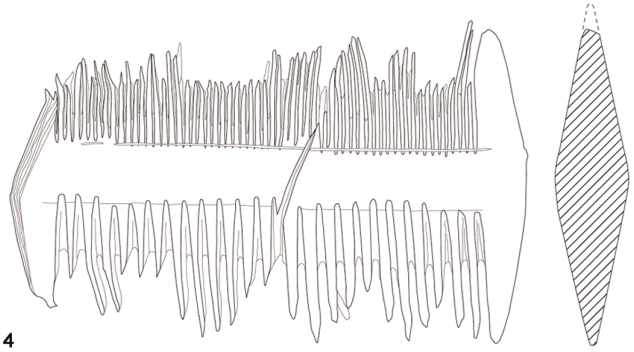

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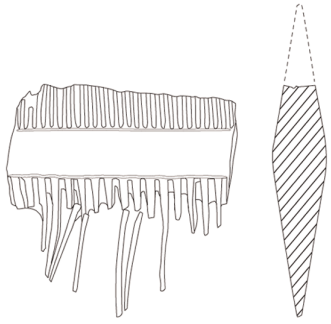
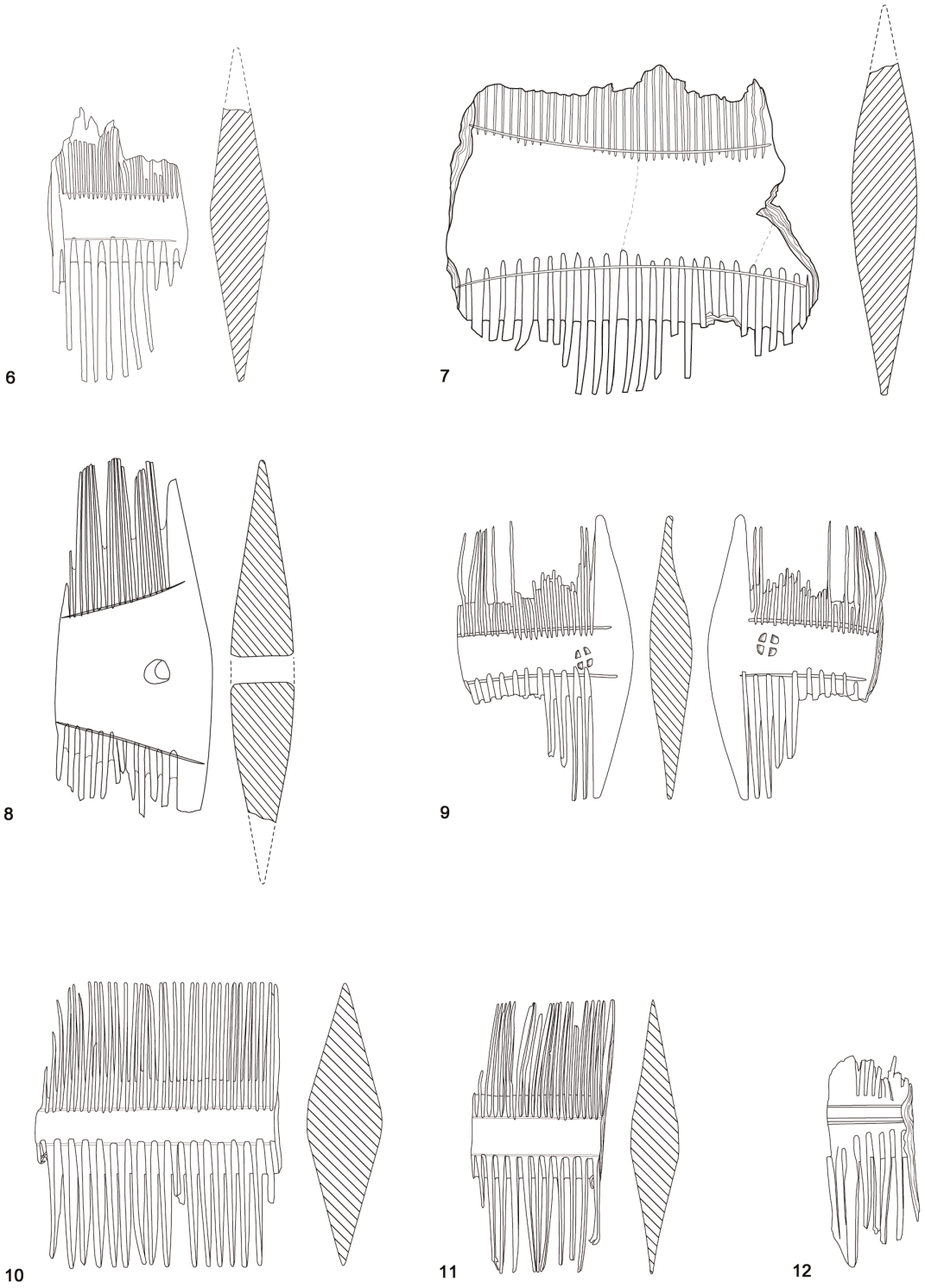


5

Pl. 1-2: Drawings of all combs from Vechten (scale 1:1)



Pl. 1-2: Drawings of all combs from Vechten (scale 1:1)

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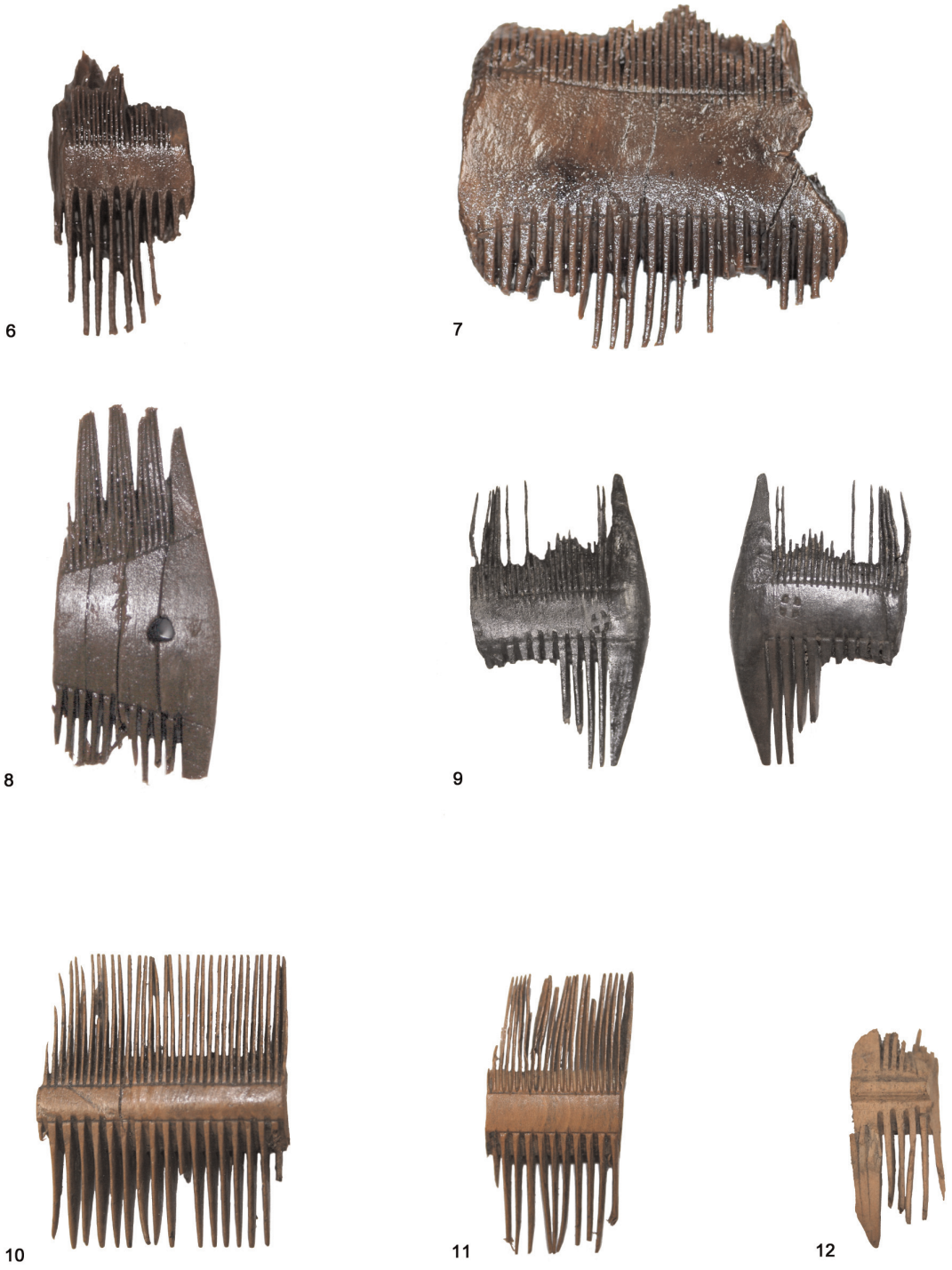
Pl. 3-4: Photographs of all combs from Vechten (scale 1:1)



Pl. 3-4: Photographs of all combs from Vechten (scale 1:1)